

Influence of smartphones on face to face social interaction

Lovro Kolanović

Mentor: Vanda Bazdan PhD

RIT Croatia

Abstract

Smartphones have become an irreplaceable tool in modern society. Although they assist us in many ways, the latest research shows that there are many negative effects of using them that we are not even aware of. This paper explores the impact smartphones have had on one of the common ways of socializing. The observation was set in two coffee bars in Dubrovnik, Croatia. Research shows that most people resort to smartphone use when in a coffee bar with others. Having the phone on the table has been proven to influence its potential use. Contrary to the popular belief age and gender did not have a significant difference in terms of phone use. This paper proved that smartphone users spend valued time with their friends, family, and colleagues while typing on their smartphone.

Introduction

The introduction of smartphones changed the human experience in a profound way. Gathering of information became easier and faster than ever, enabled us to be entertained wherever we are, especially when we are in close proximity to the internet connection (Rotondi, Stanca, & Tomasulo, 2017). Smartphones changed the way businesses operate, and even created new markets. People can connect with their peers' much easier through calls, messages, or even video calls. Smartphones surged the impact of social media, which today is one of the most important aspects of smartphone technology.

With the span of functions of the smartphone from texting, calling, being productive, taking photos and videos, watching movies, this technology mixed with ease of use simplified our lives (Turkle, 2012). The speed of information transfer was never faster than it is today, but it came with the cost of being very intrusive in our daily life.

People want to customize their lives with the help of smartphone technology (Turkle, 2012). Smartphones can occupy us with a lot of content that we forget to socialize with others. Many people who work at offices report many cases of not focusing on tasks, but using the phone to do other activities, while at the same time nobody is guilt free of using a smartphone to escape in the virtual, more colorful world that these devices give.

One of the most popular uses of a smartphone is social media apps (Carrier, 2018). Social media have not begun with the invention of Smartphones. Websites like Myspace and Facebook were pioneers at their time for bringing distant friend and family, as well as people of similar tastes in music, films, art, and fashion. Smartphone gave a new level of the connection to social media by making it available at any location and any time. The omnipresence of social media gave the possibility to create a virtual persona where people can present themselves in a light, which is not the same as the day-to-day life.

Regarding the use of smartphones in public spaces, research has shown several threats (Newman, 2008). Use of smartphones during walking on the street or driving a car, can shift focus from the surroundings and cause harm to people around. In 2015, more people died from taking a selfie than shark attack (Mohn, 2017). Since the beginning of the 2010s, death by selfie is growing in numbers. In recent years, there has been an increase of using a smartphone during flying with the airplane, even at the times that it is forbidden because signals could interfere with the ones from the airplane to the airport tower. As we can see, smartphones can cause harm in many ways, but this is not the only aspect of social interaction that can cause harm. When the cell phones started to emerge, sociologists saw the shift of communication from private to a more public act (Newman, 2008). Research showed that people saw talking on phone publicly as very rude behavior. Before cell phones, people took telephone communication very privately, but as cell phones gave the possibility to move while talking, a major shift happened. Cell phones have altered our sense of the surroundings, but maybe even worse, perception of talking publicly became rude, and the public did not like it. Since telephones could be only found on the job and in the house, a phone call was a private moment between two people, and it never mattered of the public. In the case someone had to urgently speak with someone through telephone, a popular way was to use the telephone booth, which was a large box that could fit one person, with just the telephone inside. It was both relieving for people around not to interfere and the person who was speaking in the telephone box to focus on the conversation. These were the measures that the society used to keep telephone conversation private. Today we do not care that much if someone is able to hear us speak with someone since it became a normal part of the socializing. This was brought by cell phones in the late twentieth, early twenty-first century.

Although the influence of smartphone users seems mostly negative, there is a possibility for a smartphone to be an engaging tool in conversation, helping when there is a

search for a new topic (Dwyer, Kushlev&Dunn, 2018). We are still in the infancy of research of what effect does the smartphone users have on our brain and psyche in the long run. For now, we are using technology to escape the direct social interaction or to not feel alone by aiding in this way, it can reduce boredom and make time pass more quickly during the conversation. However, this kind of influence is not researched well yet. In an exploration of how smartphones influence us, we need to explore both negative and positive effects. However, no research has experimentally manipulated phone use in the real world, and research has yet to document the psychological mechanisms underlying the effects of phone use on the rewards derived from social interactions.

Several meanings of nonverbal communication with the smartphone were categorized by Nakamura (2015). First communicating to the observers that the person is busy or/and belongs in a particular social context or physical location. The second meaning is when the person interacts with the smartphone while being with acquaintances or friends, it can communicate that the person is rejecting other people. Although a person is with others, he or she gives the sign that the smartphone is more important in the present moment. The third is when the smartphone use signals to others to wait. Fourth is when the gazer may join with observers by using the phone to collect information to use collaboratively with observers. These are not the only explanations of phone users in public spaces, but they are very likely universally valid.

History of Coffee

Coffee is a part of human civilization since the beginning of the early modern period ("The History of," n.d.). Its first mention is found in Ethiopian coffee forests, where the goat herder named Kaldi discovered it. He discovered the properties when the goats ate the coffee berries and became so energetic, they were unable to sleep during the night.

Coffee became meaningful for culture, agriculture, and trade during the 15th century on the Arabian Peninsula ("The History of," n.d.). People in the Middle East started to open first coffee houses, and they became a place where people would socialize, entertain and exchange information. Coffee came to Europe in the 17th century. Although it first found itself under the attack of religious figures in Venice. The people of that age were so afraid that this unusual beverage from the east was the invention of the Satan himself, the Pope had to declare if the coffee was "safe" to drink ("The History of Coffee", n.d.)

As previously, stated, coffee houses were first established in Turkey in the 14th century as a place where intellectuals spent time, shared information and enjoyed art. It was not uncommon to discuss politics, and the enemies of rulers would use those coffee houses a place to make plans against them. Perhaps that is one of the reasons why rulers were against the consumption of coffee (Cole, 2012). It was recorded that one of the Ottoman Grand Viziers went in disguise to visit the coffee house in Istanbul he noticed that the people who would get drunk would have a good time, they would sing and would just entertain themselves, while people who would drink coffee would be sober and would actively plot against the government.

In Turkey 17th century, Sultan would disguise as a commoner and would kill anyone who would drink coffee on the streets (Cole, 2012). Sultan would first give out the first punishment with a cudgel, but after the second time of drinking coffee, the accused would be

sewn onto a bag and thrown into a river. Not only that monarchs were against the coffee. Scientist of that time also was against the coffee, saying that by drinking it would dry up the cerebrospinal fluid, and cause paralysis. One of the more interesting protests the coffee was "The Women Petition Against Coffee" from England in 1674 which accused the coffee of making their husbands impotent. By the end of the 19th-century people were still convinced that the coffee was the drug harmful to the people (Pendergrast, 2010). People such as John Harvey Kellogg and C.W. Post started their own business of coffee substitute because even as the coffee had a bad reputation, people loved it so much that they started making coffee substitutes. But by the end of World War II coffee became a standardized product. The most popular version became the instant coffee by brands such as Nestle, but with the Starbucks and hanging out in coffee bars due to famous Nineties sitcom Friends, socializing with the cup of fresh coffee gained new popularity (Kutulas, 2018; Wulff, 2016).

Coffee Culture in Croatia and near regions:

Coffee has an important place in Croatia, due to the influence of the Ottoman empire through Bosnia. Most of the coffee in Croatia is consumed at home, with a name Turkish coffee, or at coffee shops made by Italian style of drinking coffee (Espresso), although consumption is bigger at households (Naglić, Cerjak, & Tomić, 2014; Kahrović, 2017).

Nowadays, coffee culture in Croatia is centered around visiting coffee bars to socialize with friends and family. It is a custom that foreigners note immediately. From the outside perspective, it seems that we are a lazy nation (Pisac, 2015). The saying in Croatian "Ajmo na kavu" which translates as "let's go to have a coffee" does not mean explicitly just the drinking coffee, but took the wider meaning of the actual ritual of going to coffee places with close ones, and even drinking other beverages such as alcohol or juice. Going to the coffee bars in Croatia is strongly connected to social status and relationships. An example is going out at the coffee bars on Saturday morning when famous "špica" happens. People come nicely dressed

up to show off and catch up with their friends. These customs are deeply rooted in the Croatian society, but many new trends from the outer countries are slowly coming. Coffee-to-go is still not the preferred way of drinking, but instant coffee is already common because of Nestlé (Euromonitor International, 2019). Regarding Bosnia and Herzegovina, coffee is deeply rooted in the culture, since the Turkish Empire conquered the territory of Bosnia and Herzegovina in history (Destination Sarajevo, 2015). With conquering the territory, they brought their culture. Alcohol is prohibited in Islam, and it makes coffee the most consumed drink. Most of the adult consumers have at least one cup of coffee during the day (Euromonitor International, 2019). Coffee is brewed daily in the homes in Bosnia and Herzegovina, and there is the custom called "fildžan viška" which is always making at least one cup of coffee more in the case of someone coming to the house as an unannounced guest. In addition, coffee in Bosnia is served in small cups, and the amount of coffee is very small, but it is considered very rude to drink all the coffee immediately. People savor the coffee while talking with their housemates, friends, neighbors and other relatives, and it can last more than 30-45 minutes.

Method

In the present study, the observation was chosen to be the best method for the research process. Purpose of this research is to observe the behavior of people specifically in terms of using the phone during such socializing in bars.

The participants were observed in two coffee bars in the Dubrovnik area. In both coffee bars, thirty tables were observed. There were thirty-two male and thirty-seven female individuals observed. The coffee bars were chosen based on the location, since the first coffee bar is outside of the city center, while the coffee bar two is in the city center. They both are a great representation of the coffee bars where people go to socialize and hang out with their friends, family, and colleagues.

Regarding the age of the observed people, age was grouped in several groups; 1) under eighteen, 2)nineteen till twenty-nine, 3)thirty till fifty-nine, 4) sixty and above. Information that was recorded during the observation is: Number of people at the table, age, gender, in which coffee bar the observation was done, is the smartphone on the table, is the smartphone used, type of smartphone use, time spent on smartphone and service consumed at the bar.

The researcher had to observe each table separately and watch from the moment when people sat at the table until they left it. Researched took notes on how many minutes were spent on the phone during their whole time on the table. A couple of observers observed together at each of the coffee bars.

Nationality was not taken into consideration since in observation it was impossible to ask personal information.

The following hypotheses were tested:

H₁: Most of the observed individuals will resort to phone use during drinks/coffee.

H₂: People will resort to phone useless if seated in a coffee bar in the tourist destination center.

H₃: Time of day/Gender/ Type of Service will have no effect on the frequency of phone use.

H₄: In terms of age, younger individuals are expected to resort to phone use more.

H₅: Having a cell phone on the table will lead to more frequent phone use.

Results

For the processing of the results of the observation, SPSS 26 was used to analyze the data compare defined groups and to find any correlation between them. Sample of the observation was thirty tables, with sixty-nine people, and from these people, there were thirty-two male and thirty-seven female.

Sample of the population consisted of sixty-nine people, from that 53,6% were female and 46,6% were male. In terms of age it consisted of 13% of under 18, 31,9% from 18 till 30, 49,3% from 31 till 60 and 5,8% of above the 60(table 1).

Two coffee bars were observed with 49,3% of people in the first coffee bar, and 50,7% in the second coffee bar. Most people consumed the coffee, 59,4%, juice consumers were 18,8% and alcohol consumers 21,7%. There were 55,1% of people observed in the morning, and 44,9% in the afternoon hours (Table 10).

As expected, most of the individuals resorted to phoning use during coffee or drinks (58%, 40 people). With that in mind, there is no big difference between people who used the phone and the ones who did not. Biggest time on the phone was 22 minutes, while the smallest time was 30 seconds if people who did not use the phone are not counted.

Contrary to the expected difference in terms of city center effect on phone use, there was no significant difference recorded between the two observed coffee bars. In fact, more people (62.9 %, 22 people) used their phones in the city center located bar (Table 7).

Time of day (table 4) did not prove significant for the phone use since almost same time on the phone was spent in both times of day (55,3% in the morning, 61,3% in the afternoon). Gender was also not proven to be of significant difference (1,0), but men used their phone slightly more (59,4%, 19) than female (56,8%, 13). Type of service consumed has

been proven to have a significant effect on time spent on the phone, with alcohol consumers spending most of the time (6,97 mean).

Younger people, led with the age group of under 18, used the phone more than any other group (88,9%, 8), led by age group of 18 up to 30 (59,1%, 17) (table 3).

Regarding the cell phone on the table, every person who had the phone on the table used their phone (100%, 40), those who did not put their phone on the table never used it during the observation (Table 5).

Discussion:

The effect of smartphone use in modern society is not something that is deniable. Everyone uses a smartphone daily. This senior project set out to discover how much time was spent on it during face to face social interaction with using smartphone. The differences between age, gender and consumer types were also explored.

This study did prove that most of the people use phones during their interaction with others during coffee time. Although this is the first research of its kind, it was not possible to compare the results from before, especially for the Balkan region. With that said numbers are not small. Most people used their phones in the coffee bar that is located in the city center, which was not expected. Time of day, gender, and age did not have any significant effect on phone use. Type of service affected the frequency of smartphone use; Alcohol consumers spent the most time on the phone, but there were more people who used the phone and drank coffee at the same time. As it was expected, younger individuals did use a phone the most. Every single person who had their device on the table used it at least once; while people who did not have it on the table did not use their smartphone.

As the previous research stated that smartphone users are a threat to the whole society. The interaction with the technology was never closer than today, and that technology influences our behavior in a negative way, while we do not understand the seriousness of this problem. Many studies reported lower amounts of enjoyment while being on the phone and with another person at the same time, self-reporting of productivity was lower with people who used smartphones more than other people, etc. Although there is a mostly negative attitude on the users of smartphones during interaction with other people, the positive outcomes are not yet observed to conclude if there are any positive influences. This is something that should be explored in the future in order to get the full picture on this matter.

Practical Advice

Implications of this senior project gave out a couple of advice that can help to lower the users in social situations. First one is to not have the smartphone in the visible place. Pocket or a bag are places where smartphones should be during the conversation with people. In the observation done, every person who had their smartphone on the table during their coffee picked it up at least once. This is a matter of the psychology since these devices can use the screen and other sensors that we got the notification regarding the text, call or even app notification. By removing the phone from the visible place there is the smallest chance of using the phone if there is no clear intention in doing so.

The second advice is for people who always drink coffee to switch from coffee to some other beverage, such as the juice, water or similar, but no alcohol, like beer. People who drink coffee usually pick up their device more since the coffee is in smaller amounts than the other kinds of beverages, so it leaves time for using the phone. Third advice is to drink fewer alcoholic beverages. People who drank alcohol spent more time on their mobile phones than any other person.

Limitations of the senior project

This research did come to certain limitations. When the raw data was processed, it was found that there was no significant difference between the sample observed in terms of phone users regarding the age, gender or time of day. While this may be true and sound, in the future research bigger sample should be observed, with the longer period of the observation that just a couple of weeks. Another limitation of this senior project is that because of only the amount and type of phone users was observed. With this research, it was not possible to explore the actual effect on the behavior, emotional reaction and other possible outcomes. This is something that future research could help clarify the situation.

There is still vastly unexplored ground of the sociology. Smartphone technology, while already in great advancement from their beginnings is a relatively young and the effects on the social interaction leaves a lot of room to explore in the future.

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Appendix

Table 1:

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 18	9	13,0	13,0	13,0
	18-30	22	31,9	31,9	44,9
	31-60	34	49,3	49,3	94,2
	Over 60	4	5,8	5,8	100,0
	Total	69	100,0	100,0	

Table 2:

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Men	32	46,4	46,4	46,4
	Female	37	53,6	53,6	100,0
	Total	69	100,0	100,0	

Table 3:

Age * PhoneUsed Crosstabulation					
			PhoneUsed		Total
			Yes	No	
Age	Under 18	Count	8	1	9
		% within Age	88,9%	11,1%	100,0%
		% within PhoneUsed	20,0%	3,4%	13,0%
	18-30	Count	13	9	22
		% within Age	59,1%	40,9%	100,0%
		% within PhoneUsed	32,5%	31,0%	31,9%
	31-60	Count	17	17	34
		% within Age	50,0%	50,0%	100,0%
		% within PhoneUsed	42,5%	58,6%	49,3%
	Over 60	Count	2	2	4
		% within Age	50,0%	50,0%	100,0%
		% within PhoneUsed	5,0%	6,9%	5,8%
Total		Count	40	29	69
		% within Age	58,0%	42,0%	100,0%
		% within PhoneUsed	100,0%	100,0%	100,0%

Table 4:

TimeOfDay * PhoneUsed Crosstabulation					
			PhoneUsed		Total
			Yes	No	
TimeOfDay	Morning	Count	21	17	38
		% within TimeOfDay	55,3%	44,7%	100,0%
		% within PhoneUsed	52,5%	58,6%	55,1%
	Afternoon	Count	19	12	31
		% within TimeOfDay	61,3%	38,7%	100,0%
		% within PhoneUsed	47,5%	41,4%	44,9%

Total	Count	40	29	69
	% within TimeOfDay	58,0%	42,0%	100,0%
	% within PhoneUsed	100,0%	100,0%	100,0%

Table 5:

PhoneOnTheTable * PhoneUsed Crosstabulation					
			PhoneUsed		Total
			Yes	No	
PhoneOnTheTable	1,0	Count	40	8	48
		% within PhoneOnTheTable	83,3%	16,7%	100,0%
		% within PhoneUsed	100,0%	27,6%	69,6%
	2,0	Count	0	21	21
		% within PhoneOnTheTable	0,0%	100,0%	100,0%
		% within PhoneUsed	0,0%	72,4%	30,4%
Total		Count	40	29	69
		% within PhoneOnTheTable	58,0%	42,0%	100,0%
		% within PhoneUsed	100,0%	100,0%	100,0%

Table 6:

ServiceConsumed * PhoneUsed Crosstabulation					
			PhoneUsed		Total
			Yes	No	
ServiceConsumed	Coffee	Count	23	18	41
		% within ServiceConsumed	56,1%	43,9%	100,0%
		% within PhoneUsed	57,5%	62,1%	59,4%
	Juice	Count	7	6	13
		% within ServiceConsumed	53,8%	46,2%	100,0%
		% within PhoneUsed	17,5%	20,7%	18,8%

	Alcohol	Count	10	5	15
		% within ServiceConsumed	66,7%	33,3%	100,0%
		% within PhoneUsed	25,0%	17,2%	21,7%
Total		Count	40	29	69
		% within ServiceConsumed	58,0%	42,0%	100,0%
		% within PhoneUsed	100,0%	100,0%	100,0%

Table 7:

CofeeBar * PhoneUsed Crosstabulation					
			PhoneUsed		Total
			Yes	No	
1Bar	Sesame	Count	18	16	34
		% within 1Bar	52,9%	47,1%	100,0%
		% within PhoneUsed	45,0%	55,2%	49,3%
	Gradska Kavna	Count	22	13	35
		% within 1Bar	62,9%	37,1%	100,0%
		% within PhoneUsed	55,0%	44,8%	50,7%
Total		Count	40	29	69
		% within 1Bar	58,0%	42,0%	100,0%
		% within PhoneUsed	100,0%	100,0%	100,0%

Table 8:

Descriptives						
minutes						
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Under 18	9	7,1111	5,37225	1,79075	2,9816	11,2406
18-30	22	2,8333	4,36072	,92971	,8999	4,7668

31-60	34	3,1044	4,77932	,81965	1,4368	4,7720
Over 60	4	7,2500	10,37224	5,18612	-9,2545	23,7545
Total	69	3,7809	5,27204	,63468	2,5144	5,0474

Table 9:

Descriptives						
minutes						
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Coffee	41	2,8142	4,22176	,65933	1,4817	4,1468
Juice	13	3,1538	4,27875	1,18671	,5682	5,7395
Alcohol	15	6,9667	7,37628	1,90455	2,8818	11,0515
Total	69	3,7809	5,27204	,63468	2,5144	5,0474

Table 10:

ServiceConsumed					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Coffee	41	59,4	59,4	59,4
	Juice	13	18,8	18,8	78,3
	Alcohol	15	21,7	21,7	100,0
	Total	69	100,0	100,0	

Table 11:

CoffeeBar				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Sesame	34	49,3	49,3	49,3
	Gradska Kavna	35	50,7	50,7	100,0
	Total	69	100,0	100,0	

Table 12:

PhoneOnTheTable					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,0	48	69,6	69,6	69,6
	2,0	21	30,4	30,4	100,0
	Total	69	100,0	100,0	